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10/759,570	01/20/2004	Takahiko Murata	60188-754	8016

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CUTLER, ALBERT H

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 November 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *4,5,12 and 14-21* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4,5,12 and 14-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is responsive to communication filed on November 9, 2007.

Claims 4, 5, 12, and 14-21 are pending in the application.

Continued Examination Under 37 CFR 1.114

2.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

November 9, 2007 has been entered.

Response to Arguments

3.   Applicant's arguments with respect to claims 4, 5 and 12 have been considered

but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5.   Claims 4, 12, 14 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated

by Moraillon (4,553,159).

Consider claim 4, Moraillon teaches:

A solid state imaging apparatus(figure 3), comprising:

a plurality of pixels two-dimensionally arranged in a vertical direction and a horizontal direction(see figures 2 and 3) wherein each of the plurality of pixels has a color filter having a different color from color filters of vertically **or horizontally** adjacent pixels(Each of the plurality of pixels has a color filter having a different color from color filters of horizontally adjacent pixels. See figures 2 and 3, paragraph column 2, lines 23-36); and

a signal output circuit(12, 13, 14, 15) configured to perform one of two types of operations(The signal output circuit performs operations for outputting the green pixels alone and for outputting the red and blue pixels, column 2, line 42 through column 3, line 7), wherein the signal output circuit includes:

a first shift register(12, figure 3) for sequentially outputting selection signals, which select each pixel, to all of the plurality of the pixels either in a **vertical or** a horizontal direction(The first shift register(12) selects all the plurality of pixels in vertical direction(i.e. selects all the green pixels). See column 2, line 54 through column 3, line 7, figure 3.), and

a second shift register(13) for continuously outputting the selection signals to some of the plurality of pixels having color filters of the same color either in a vertical or a **horizontal direction partially**(The second shift register continuously selects pixels having red color filters in the horizontal direction, and then continuously selects pixels

having blue color filters in the horizontal direction, column 2, line 42 through column 3, line 7.).

Consider claim 12, Moraillon teaches:

A camera(column 1, lines 7-8, column 2, lines 10-36) comprising a solid state imaging apparatus(figure 3), comprising:

a plurality of pixels two-dimensionally arranged in a vertical direction and a horizontal direction(see figures 2 and 3) wherein each of the plurality of pixels has a color filter having a different color from color filters of vertically **or horizontally** adjacent pixels(Each of the plurality of pixels has a color filter having a different color from color filters of horizontally adjacent pixels. See figures 2 and 3, paragraph column 2, lines 23-36); and

a signal output circuit(12, 13, 14, 15) configured to perform one of two types of operations(The signal output circuit performs operations for outputting the green pixels alone and for outputting the red and blue pixels, column 2, line 42 through column 3, line 7), wherein the signal output circuit includes:

a first shift register(12, figure 3) for sequentially outputting selection signals, which select each pixel, to all of the plurality of the pixels either in a **vertical or a** horizontal direction(The first shift register(12) selects all the plurality of pixels in vertical direction(i.e. selects all the green pixels). See column 2, line 54 through column 3, line 7, figure 3.), and

a second shift register(13) for continuously outputting the selection signals to some of the plurality of pixels having color filters of the same color either in a vertical or a **horizontal direction partially**(The second shift register continuously selects pixels having red color filters in the horizontal direction, and then continuously selects pixels having blue color filters in the horizontal direction, column 2, line 42 through column 3, line 7.).

Consider claim 14, and as applied to claim 4 above, Moraillon further teaches:

the second shift register(13) repeats, after continuously outputting signals of the plurality of pixels having color filters of the same color(red), an operation which continuously outputs signals of the plurality of pixels having color filters of a different color(blue), on a basis of each pixel mixture unit consisting of a plurality of pixels(See figure 3, column 2, line 49 through column 3, line 7.), and the pixel mixture unit consists of 25 pixels arranged in five rows and five columns(See figure 3, the pixel mixture unit(i.e. those pixels read out to the second shift register(13)) consists of five columns and five or more rows.).

Consider claim 16, and as applied to claim 4 above, Moraillon further teaches:

the first shift register(12) performs a regular operation(The first shift register only shifts out pixels of a single color.), and a second shift register(13) performs a pixel mixture operation(The second shift register shifts out a mixture of red and blue pixels. See column 2, line 42 through column 3, line 7.).

6.   Claims 5, 15, 18, 19 and 21 are rejected under 35 U.S.C. 102(b) as being

anticipated by Terada et al.(US 6,124,888).

        Consider claim 5, Terada et al. teach:

        A solid state imaging apparatus(figure 25-29B), comprising:

        a plurality of pixels(608) two-dimensionally arranged in a vertical direction and a

horizontal direction(see figure 26, 27A, 27B) wherein each of the plurality of pixels has a

color filter having a different color from color filters of vertically or horizontally adjacent

pixels(see figure 27A); and

        a signal output circuit(figures 25 and 26) configured to perform one of two types

of operations(Still image operations and video operations are performed, column 25,

lines 37-63.), wherein the signal output circuit includes:

        a shift register(610) for sequentially outputting via a transistor selection signals,

which select each pixel(Switches SW1, SW2, etc. are used to select each pixel, column

26, lines 5-22. These switches are comprised of transistors, see 3, figure 1, column 7,

lines 4-26.), to all of the plurality of pixels either in a vertical or a horizontal

direction(Selection signals are sent to all pixels in a still image mode, column 25, lines

46-54.) and

        an operation switching circuit(Mode selection means, 607; Switches SW1, SW2,

etc.) for outputting the selection signals from the shift register(column 25, lines 37-63,

column 26, lines 5-22), the operation switching circuit configured to switch between a

first signal transmission method in which the selection signals are sequentially output to all pixels either in the vertical direction or the horizontal direction(Selection signals are sent to all pixels in a still image mode, column 25, lines 46-54.) and a second signal transmission method in which the selection signals are continuously output to some pixels having color filters of the same color either in the vertical direction or the horizontal direction partially having color filters of the same color are partially(In the video mode, selection signals are continuously output to pixels having the same color in vertical direction and the horizontal direction, figure 27A, column 26, line 41 through column 28, line 31).

Consider claim 15, and as applied to claim 5 above, Terada et al. further teach:

the second signal transmission method repeats, after continuously outputting signals of the plurality of pixels having color filters of the same color(for example, green), an operation which continuously outputs signals of the plurality of pixels having color filters of a different color(for example, red, column 26, line 63 through column 27, line 14), on a basis of each pixel mixture unit consisting of a plurality of pixels(four pixels are mixed(i.e. added together), column 28, lines 17-27, figure 27A), and

the pixel mixture unit consists of 25 pixels arranged in five rows and five columns(Terada et al. teach that the number of pixels to be added is not limited to four, column 28, lines 21-22.).

Consider claim 18, and as applied to claim 5 above, Terada et al. further teach:

the first signal transmission method is a sequential scanning method, and the

second transmission method is a pixel mixture scanning method(In the first method, all

pixels are read out, whereas, in the second method, the pixels are thinned and groups

of four same-colored pixels are mixed, column 25, lines 36-63, column 28, lines 17-27.).

Consider claim 19, and as applied to claim 18 above, Terada et al. further teach:

a static image mode is executed by the sequential scanning method, and a

moving image mode is executed by the pixel mixture scanning method(column 25, lines

37-63).

Consider claim 21, and as applied to claim 5 above, Terada et al. further teach

the solid state imaging apparatus is of a MOS type, and the operation switching circuit

comprises a plurality of MOS transistors selected by a plurality of gate signal

lines(column 9, lines 18-39).

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness or nonobviousness.

9.   Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Moraillon(US 4,553,159).

     Consider claim 17, and as applied to claim 16 above, Moraillon teaches of a

camera(column 1, lines 7-8, column 2, lines 10-36) which performs a regular operation

and a pixel mixture operation(see claim 16 rationale) using a solid state imaging

array(column 1, lines 10-15, column 2, lines 10-36). Moraillon teach that both the

regular operation and the pixel mixture operation are performed every time the imager is

read out, regardless of what kind of imaging mode the camera might be in(column 2,

line 42 through column 3, line 7). However, Moraillon does not explicitly teach that a

static image mode is executed by the regular operation, and a moving image mode is

executed by the pixel mixture operation.

     However, **Official Notice** (MPEP § 2144.03) is taken that both the concepts and

advantages of using a solid state imaging array in both a static mode and a moving

image mode are well known and expected in the art. It would have been obvious to a

person having ordinary skill in the art at the time of the invention to include both static

image and moving image modes in the camera taught by Moraillon for the benefit of

increasing the versatility and marketability of the camera.

10. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over

Moraillon in view of Skow et al.(US 2004/0085475).

Consider claim 20, and as applied to claim 4 above, Moraillon further teaches

that the first and second shift registers(12 and 13) are laid out in the same direction(see

figure 3).

However, Moraillon does not explicitly teach that the solid state imaging

apparatus is of a MOS type.

Skow et al. are similar to Moraillon in that Skow et al. teach of a camera(figure 1,

paragraph 0024) including an imaging array comprising pixels covered with red, green

and blue color filters(see figure 5, paragraph 0058).

However, in addition to the teachings of Moraillon, Skow et al. teach that the solid

state imaging apparatus is of a MOS type(paragraph 0025).

Therefore, it would have been obvious to a person having ordinary skill in the art

at the time of the invention to embody the imaging apparatus taught by Moraillon using

MOS technology as taught by Skow et al. for the benefit that MOS devices have high

speed and extremely low power consumption(Skow et al., paragraph 0025).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC

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SUPERVISORY PATENT EXAMINER